Table 1: Clinical Outcomes with results of Univariate and Multivariate analysis

	5-years LC*	5-years OS**	5-years CSS**	5-years DFS**	5-years NRFS**	5-years MFS**
Overall Population	75.4%	60%	77%	50 %	92%	88%
T						
T1-2	78%	65%	81%	47%	95%	90%
T3-4	68%	54%	72%	47%	88%	86%
p	NS	NS	NS	NS	NS	NS
N						
N0	76%	59%	77%	47%	94%	91%
N1-3	66%	62%	77%	47%	87%	82%
p	NS	**NS**	NS	NS	NS	NS
Concomitant CT						
Oui	71%	76%	77%	66%	95%	88%
Non	78%	39%	76%	26%	86%	90%
p	NS	**<0.001**	NS	**<0.001**	0.05	NS
Type of Concomitant CT						
5-FU/CDDP						
5-FU/MMC	70%	77%	77%	58%	94%	91%
Others	83%	83%	83%	80%	100%	83%
p	66%	66%	66%	50%	100%	100%
	NS	NS	NS	**0.014**	NS	NS
Total RT Dose						
≤59Gy	76%	71%	80%	51%	94%	90%
>59Gy	71%	49%	74%	44%	89%	87%
p	NS	**0.03**	NS	NS	NS	NS
Response after RT+/-CT						
≤ 75%						
> 75%	38%	32%	39%	36%	77%	61%
p	91%	74%	95%	54%	98%	98%
	<0.0001	**<0.0001**	**<0.0001**	NS	**0.04**	**<0.0001**
LC						
Yes		76%	100%		100%	85%
Not	-	12%	20%	-	57%	48%
P		**<0.0001**	**<0.0001**		**<0.001**	**<0.0001**
Boost Dose						
<16 Gy	84%	80%	87%	61%	100%	94%
≥16 Gy	64%	63%	72%	59%	91%	82%
p	NS	**0.04**	NS	NS	NS	NS
Inguinal RT						
Yes	75%		81%	59%	96%	89%
Not	68%	-	65%	24%	100%	89%
p	NS		NS	0.05	**0.003**	NS
Multivariate analysis	-	**- concomitant CT p= 0.048 - LC p<0.0001**	-	-	**- LC p<0.0001**	

Conclusions: RT±CT achieve good LC rates in anal canal cancer patients. In our experience, local response and LC statistically influenced the Cancer Specific Survival and the risk of systemic relapse. High acute skin toxicity rates probably impose to tailor volumes and techniques of irradiation following the patient and tumor characteristics (more tailored indications for inguinal RT?).

PO-0699

IMRT with SIB in the treatment of anal cancer: a mono-institutional experience.

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Purpose/Objective: Chemoradiation is worldwide considered the standard treatment of anal cancer, with a high rate of sphincter preservation, local control and survival. However, this strategy often leads to significant acute morbidity, playing a negative impact on clinical outcome. New technological advances could improve dose delivery and therapeutic index ratio. As IMRT allows simultaneous integrated boost (SIB) of higher RT doses to the gross tumor volume and lower doses to normal tissue, our purpose is to evaluate if this recently introduced technique can result in a better outcome in terms of tolerance and clinical results for patients affected by anal carcinoma.

Materials and Methods: Between February 2009 and October 2012, 31 patients, median age 62 years, with stage I (6 pts), II (6 pts), IIIA (8 pts), IIIB (11 pts) were treated with RT±CT. 19 patients underwent 2 courses of MMC and 5 FU (during the first and last week of RT); 3 pts received Capecitabine concurrent with RT; 3 pts received Capecitabine and MMC. IMRT with SIB was delivered by Helical Tomotherapy (HT) in 24 patients and by a Linac-based step & shoot technique in 7. The prescribed doses were 50.6-55 Gy to CTV1 (primary tumor, involved nodes and high risk area) and 41.4-45 Gy to CTV2 (low risk subclinical disease), in 23-25 daily fractions. Megavoltage CT scans were obtained for patient alignment before each treatment in the group treated with HT while weekly portal images were performed in the other group. The clinical status during RT was analyzed through the evaluation of supportive care type defined by analgesic need.

Results: All patients received the prescribed dose and none had treatment breaks due to acute toxicity, except for one, who refused to conclude treatment, receiving 50.6 Gy on CTV1 in 23 fractions. For all patients, dose volumes results for CTVs are reported in the table. Mean doses to bladder and bowel were respectively 28.5 and 16.4 Gy. The median follow-up is 12 months (range 1-36). The most significant severe genitourinary acute toxicities reported at treatment end were grade 3 vaginal bleeding (3%) and grade 2 vaginal burn (6%). Cutaneous grade 3 erythema was recorded in 20% of patients and grade 2 gastrointestinal toxicities in 16%. Generally, skin toxicity appeared in the last week of RT and recovered in 2 weeks. 16 (53%) patients needed analgesic support (tramadol, codeine or major opioids). At a minimum FU of 4 months, 22 patients are evaluable for clinical response: 19 (86%) patients achieved complete response (CR), 2 patients underwent local progression after initial partial response (PR) and one patient had progressive disease (PD). One patient died for PD.

Volume/Gy	Prescription Dose (Gy)	Mean Dose	Max Dose	Min Dose
CTV55	55	54.9	56.8	51.4
CTV50.6	50.6	51	52.9	47.7
CTV45	45	47	55.9	38.4
CTV41.4	41.4	42.5	52	39.3

Conclusions: IMRT with SIB achieves great homogeneity in the dose distribution and a significantly good sparing of the organs at risk, also shortening total treatment time. The combined chemo-radiotherapy also shows excellent results in terms of toxicity and local control.

POSTER: CLINICAL TRACK: GENITOURINARY (PROSTATE INCLUDED)

PO-0700

Stereotactic body radiation therapy with real-time tracking for localized prostate cancer

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Purpose/Objective: Stereotactic Body Radiation Therapy (SBRT) take advantage of the prostate low a/b ratio to deliver a large radiation dose in few fractions. Recent technological developments, combined with modern understanding on prostate radiobiology have generated enthusiasm for hypofractionated regimens. We report our preliminary results with Cyberknife stereotactic radiosurgery in patients with clinically localized prostate cancer.

Materials and Methods: From July 2007 to October 2011, 107 patients with a median age of 75 (range 60– 86) years, a T1c –T2 b prostate cancer were treated with Cyberknife stereotactic radiosurgery at our institution. The majority of patients 59 (55%) were low risk , 28 pts (26%) were intermediate risk and 19 pts (19%) were high risk patients using the NCCN criteria . Pre-treatment PSAs ranged from 1.75 to 23.88 ng.ml (median 7.4 ng.ml). Among the entire study cohort 7 of 19 high risks patients received androgen deprivation therapy (ADT), ADT was not administered to any low – intermediate risk patients A prescribed dose of 38 Gy in four fractions was delivered to the PTV, which was defined as the prostate (plus seminal vesicles in High risk patients) expanded 3 mm posteriorly and 5 mm elsewhere. Real-time intrafractional motion tracking was used. Biochemical control was assessed using the nadir+2 (Phoenix) definition.

Results: All patients were placed on A-blockade medication at the beginning of Cyberknife radiosurgery treatment. Acute side effects were generally mild and resolved shortly after treatment. No rtog grade 4 acute or late ractal/urinary complications was observed. 3 patients developed Grade 3 late urinary toxicity following repeated urological instrumentation, including cistoscopy and urethral dilatation. Four patients, one with prior Turp, experienced incontinence, one 9 months after treatment, two 12 months after treatment, one 27 months later. One patient experienced rectal incontinence 12 months after treatment. The actuarial median follow up is 30 months (range 12 – 60 months). The four years actuarial psa relapse free survival rate is 93.9% (CI: 88.0%-99..8%). To date 5 patients failed biochemically. One low risk patient revealed local relapse 30 months after Cyberknife treatment. One high risk patient developed bone metastases, in 2 intermediate and in 1 high risk patient we observed nodal metastases. All patients are alive except four died of unrelated causes.

Conclusions: Cyberknife SBRT produces excellent biochemical control rates at up to 4 years with mild toxicity and minimal impact on quality of life. Median PSA levels compare favourably with other radiation